

REMARKS

The Office Action of December 16, 2005, has been received and considered. Applicants appreciate the opportunity for their counsel to meet with the examiners, and the indication that the proposed claim 15 appears to define over U.S. Patent No. 3,794,092 to Carlson et al. As discussed during the interview, claim 1 has been replaced with new claim 15. Reconsideration of the application as amended is requested.

The present invention pertains to a self-tapping screw that includes a unique thread structure which provides an improved result when used in conjunction with sheet metal. In particular, the screw includes a front area thread including a rear flank that is straight from the tip to the core, and a rear area thread including a load flank that is straight from the tip to the core. Moreover, the bisector of the flank angle reverses from the rear area to the front area such that the bisector is outwardly inclined away from the screw head in the rear area and outwardly inclined toward the screw head in the front area. The sheet metal is pushed substantially forward by the front area threads as the screw is fed into the sheet metal. The rear area thread is then shaped to be well supported by the formed sheet metal to have an enhanced holding force. None of the prior art cited in the Office Action disclose or suggest the thread of the inventive screw as set forth in claim 15.

Claim 1 had been rejected under 35 U.S.C. §102(b) as being anticipated by Carlson. The screw in the embodiment of Figures 7 and 8 includes a front area thread and a rear area thread. However, the thread in the front area fails to include a straight rear flank from the core to the tip, and the thread in the rear area fails to include a straight load flank from the core to the tip. Rather, the front area threads in Carlson have a

curved rear flank. Likewise, the load flank is curved in the rear area threads. Hence, Carlson clearly does not anticipate claim 15.

Moreover, Carlson seeks to consistently tighten the connection of a screw received within a threaded nut so that it is not as subject to loosening due to vibrations. Accordingly, the slight curve on the rear flank of the front area threads reshapes the threads on the nut to eliminate the variables that can exist due to tolerance considerations. There is no suggestion to modify the threads of Carlson to include front area threads with a straight rear flank and rear area threads with a straight load flank along with a reversing bisector as recited in the claims.

During the interview, the examiner raised the possible combination of U.S. Patent Nos. 6,185,896 to Roberts et al. and 6,722,833 to Birkelbach. However, there is no suggestion for such a combination. Only the Applicants' own disclosure in this application suggests the benefit to be gained by the claimed combination of threads. There must be some suggestion in the prior art for an alleged combination to be considered obvious to one of ordinary skill in the art. In this case, there simply is no such suggestion.

Roberts discloses a screw, such as in Figure 7, with uniform threads wherein the rear flank is straight from core to tip. As noted, there is no disclosure or suggestion that the threads should reverse to switch the inclination of the bisector. Further, Roberts discloses that the load flank should be close to 90 degrees to provide the result desired for the disclosed roofing environment (see, e.g., col. 4, lines 32-36). With the use of a flat load flank at close to 90 degrees, Roberts actually teaches that the threads should not be reversed such that the orientation of the bisector switches. Accordingly, it would be

against the teachings of Roberts to modify the screw threads as suggested during the interview.

For these reasons, Applicants submit that claims 2-15 should be allowed. A notice to this effect is earnestly requested.

Respectfully submitted,

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Entitled: Self Tapping Screw

First Named Inventor: RALF BIRKELBACH

Examiner: Jeffrey A. Sharp

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